

WHAT IS CLAIMED IS:

1. A turbine nozzle including an airfoil having an airfoil shape, said airfoil having a nominal profile substantially in accordance with Cartesian coordinate values of X, Y and Z set forth in Table I wherein the Z values are non-dimensional values within a range from 0.1 to 0.90 convertible to Z distances in inches by multiplying the Z values of Table I within said range by a height of the airfoil in inches, and wherein the X and Y values are distances in inches which, when connected by smooth continuing arcs, define airfoil profile sections at each distance Z within said range thereof, the profile sections at the Z distances within said range being joined smoothly with one another to form said nozzle airfoil shape.
2. A turbine nozzle according to Claim 1 forming part of a third stage of a turbine.
3. A turbine nozzle according to Claim 1 wherein the airfoil has a root radius of 29.255 inches at a trailing edge thereof and a height of 15.420 inches along the trailing edge, said nozzle comprising part of a third stage of a turbine.
4. A turbine nozzle according to Claim 1 wherein said airfoil shape lies in an envelope within ± 0.160 inches in a direction normal to any airfoil surface location.
5. A turbine nozzle including an airfoil having an uncoated nominal airfoil profile substantially in

accordance with Cartesian coordinate values of X, Y and Z set forth in Table I wherein the Z values are non-dimensional values within a range from 0.1 to 0.9 convertible to Z distances in inches by multiplying the Z values of Table I within said range by a height of the airfoil in inches, and wherein the X and Y values are distances in inches which, when connected by smooth continuing arcs, define airfoil profile sections at each distance Z within said range thereof, the profile sections at the Z distances within said range thereof being joined smoothly with one another to form said nozzle airfoil shape, the X, Y and Z distances being scalable as a function of the same constant or number to provide a scaled-up or scaled-down airfoil.

6. A turbine nozzle according to Claim 5 forming part of a third stage of a turbine.

7. A turbine nozzle according to Claim 4 wherein the airfoil has a root radius of 29.255 inches at a trailing edge thereof and a height of 15.420 inches along the trailing edge, said nozzle comprising part of a third stage of a turbine.

8. A turbine comprising a turbine stage having a plurality of nozzles, each of said nozzles including an airfoil having an airfoil shape, said airfoil having a nominal profile substantially in accordance with Cartesian coordinate values of X, Y and Z set forth in Table I wherein the Z values are non-dimensional values within a range from 0.1 to 0.9 convertible to Z distances in inches by multiplying the Z values of Table I within said range by a height of the airfoil in inches, and

wherein X and Y values are distances in inches which, when connected by smooth continuing arcs, define airfoil profile sections at each distance Z within said range, the profile sections at the Z distances within said range being joined smoothly with one another to form said nozzle airfoil shape.

9. A turbine according to Claim 8 wherein the turbine nozzle comprises part of a third stage of the turbine.

10. A turbine according to Claim 8 wherein the turbine stage has 64 airfoils and coordinate value Y extends parallel to an axis of rotation of the turbine.

11. A turbine according to Claim 8 wherein each of the airfoils has a root radius of 29.255 inches at a trailing edge thereof and a height of 15.420 inches along the trailing edge, said turbine nozzle comprising a part of a third stage of the turbine.

12. A turbine according to Claim 8 wherein said airfoil shape lies in an envelope within ± 0.160 inches in a direction normal to any airfoil surface location.